



Name: _____
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 Geometry, Period _____
 Due Date: Fri, 21 Nov 2014

HW60_Product_vs_Power_Exponent_Rules

Form A

**Geometry
Homework**

Quotient Rule Worksheet

Rewrite the following as single exponent using quotient rule:

Example: $\frac{3^5}{3^2} = 3^{5-2} = 3^3$

Use quotient rule and rewrite each expression as single exponent.

1) $17^{-18} \div 17^7$

2) $(-8)^{12} \div (-8)^9$

3) $11^{-6} \div 11^{-7}$

4) $(-10)^{-5} \div (-10)^{-12}$

5) $13^{11} \div 13^{-8}$

6) $3^{17} \div 3^9$

Use quotient rule and simplify. Write your answers in positive exponents.

1) $\frac{y^9}{y^3} = y^{9-3}$
 y^6

2) ~~$\frac{t^7}{t^5}$~~

3) $\frac{t^5}{t^4}$

4) $\frac{x^6}{x^4}$

5) $\frac{q^{10}}{q^3}$

6) $\frac{h^8}{h^5}$

7) $\frac{b^8}{b^6}$

8) ~~$\frac{d^9}{d^4}$~~

9) $\frac{t^{10}}{t^8}$

Use quotient rule and simplify. Write your answers in positive exponents.

$$1) \frac{4s^{-3}t^{-4}}{8s^6t^8}$$

$\frac{4}{8} \cdot s^{(-3-6)} \cdot t^{(-4-8)}$

$\frac{1}{2} \cdot s^{-9} \cdot t^{-12}$

$\frac{1}{2s^9t^{12}}$

$$2) \frac{3u^8v^4}{7u^5v^2}$$

$$3) \frac{9p^5q^{-2}}{3p^2q^6}$$

$$4) \frac{7a^{-3}b^9}{2a^2b^{-5}}$$

$$5) \frac{4x^9y^4}{5x^2y^2}$$

$$6) \frac{r^{-4}s^5}{r^{-8}s^{-9}}$$

$$7) \frac{9v^{-10}w^4}{7v^3w^{10}}$$

$$8) \frac{3g^{-9}h^4}{8g^{-6}h^8}$$

$$9) \frac{5m^7n^5}{2m^4n^5}$$

$$10) \frac{2k^5l^{-10}}{8k^9l^{-5}}$$

$$11) \frac{3a^6b^5}{9b^8a^2}$$

$$12) \frac{7q^5r^{-4}}{5q^6r^7}$$

$$13) \frac{(8^6)^2}{(8^2)^6}$$

$$14) \frac{(8w^4x^2)^5}{(3w^{-5}x^{-10})^{-1}}$$

$$15) \frac{y^4z^{10}}{(yz^5)^2}$$

$$16) \frac{(8cd^9)^2}{(2c^{-8}d^4)^{-2}}$$

$$17) \frac{(4mn^9)^6}{(5m^4n)^9}$$

$$18) \frac{(2p^{-6}q^2)^5}{(8p^{10}q^{-5})^2}$$